

# **SILICON CONTROLLED RECTIFIER STRUCTURE WITH GUARD RING CONTROL CIRCUIT**

## **ABSTRACT OF THE INVENTION**

The present invention provides a PMSCR (bridging modified lateral modified silicon controlled rectifier having first conductivity type) with a guard ring controlled circuit. The present invention utilizes controlled circuit such as switch to control functionally of guard ring of PMSCR. In normal operation, the switch is of low impedance such that the guard ring is short to anode and collects electrons to enhance the power-zapping immunity. Furthermore, during the ESD (electrostatic discharge) event, the switch is of high impedance such that the guard ring is non-functional. Thus, the PMSCR with guard ring control circuit can enhance both the ESD performance and the power-zapping immunity in the application of the HV (high voltage) pad.